

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A process of connecting semiconductor die to a substrate having a top surface,
said process comprising the steps of:
providing a thin, flexible, heat curable, polyimide, insulative film which is of a first area;
laying said thin flexible film on a [[thin]] semiconductor wafer of a second area, said semiconductor wafer being provided with a plurality of spaced apart semiconductor die, each of said semiconductor die having a respective third area which is substantially less than said first area;
preheating said semiconductor wafer and said thin flexible film without applying any external pressure to partially cure said thin flexible film, thereby forming adhesion between said thin flexible film and said semiconductor wafer;
thereafter simultaneously singulating both said thin flexible film and said plurality of identical semiconductor die to form individual elements;
heating said substrate;
thereafter placing at least one of said singulated semiconductor die on the top surface of said heated substrate with the thin flexible film on said die pressed against said top surface and adhered thereto; and
thereafter heating said semiconductor die and said substrate to a curing temperature to fully cure said thin flexible film to firmly adhere said semiconductor die to said substrate.

2. (Original) The process of Claim 1 wherein said substrate is a conductor lead frame.

Claims 3 and 4. (Cancelled)

5. (Original) The process of Claim 1 wherein said film on said die has the same or different area as that of said die after assembly onto said substrate.

6. (Previously Presented) The process of Claim 1 which includes a further step of adhering a second semiconductor die with a second thin flexible adhesive film thereon to said substrate at a position laterally removed from the first die.

7. (Original) The process of Claim 1 which includes the further step of adhering a second die with a second adhesive film thereon to the top of said die secured to said substrate.

8. (Original) The process of Claim 1 wherein said first area is substantially identical to, or different from, said second area.

9. (Original) The process of Claim 1 wherein said die and film are moved to said substrate by pick-and-place apparatus.

10. (Original) The process of Claim 1 wherein said adhesive film has a smaller area than said top surface of said die.

11. (Original) The process of Claim 7 wherein said adhesive film has a smaller area than said top surface of said die and wherein said second die and said second adhesive film both have the same area as said adhesive film.

12. (Currently Amended) A method of manufacturing a semiconductor device comprising the steps of:
providing a wafer with a plurality of spaced apart semiconductor elements;

laying a thin, flexible, polyimide, insulative film, which is separate from said wafer, and said wafer atop one another to form a film/wafer structure;

preheating said film/wafer structure without applying any external pressure to partially cure said thin flexible film, thereby forming adhesion between said thin flexible film and said wafer;

singulating said film/wafer structure with said partially cured thin flexible film, thereby forming a plurality of individual semiconductor dies;

heating said substrate;

placing at least one individual semiconductor die with said partially cured thin flexible film, which faces a substrate, on the said heated substrate; and

applying heat to fully cure said thin flexible film, thereby bonding said individual semiconductor die with said substrate.